

WHAT IS CLAIMED IS:

1 1. An isolated polynucleotide encoding a protein less than about 300
2 amino acids comprising a sequence selected from the group consisting of:

3 (a) sequence provided in SEQ ID NO:3;
4 (b) complements of the sequence provided in SEQ ID NO:3;
5 (c) sequences having at least 90% identity to a sequence of SEQ ID NO:
6 3; and
7 (d) degenerate variants of a sequence provided in SEQ ID NO:3.

1 2. An isolated polypeptide comprising an amino acid sequence selected
2 from the group consisting of:

3 (a) sequences encoded by a polynucleotide of claim 1; and
4 (b) sequences having at least 90% identity to a sequence encoded by a
5 polynucleotide of claim 1; and
6 (c) sequences provided in SEQ ID NOs:16-20; and
7 (d) sequences provided in SEQ ID NOs:21-840; and
8 (e) sequences provided in SEQ ID NOs:841-861.

1 3. An expression vector comprising a polynucleotide of claim 1 operably
2 linked to an expression control sequence.

1 4. A host cell transformed or transfected with an expression vector
2 according to claim 3.

1 5. An isolated antibody, or antigen-binding fragment thereof, that
2 specifically binds to a polypeptide of claim 2.

1 6. A method for detecting the presence of a cancer in a patient,
2 comprising the steps of:

3 (a) obtaining a biological sample from the patient;
4 (b) contacting the biological sample with a binding agent that binds to a
5 polypeptide of claim 2;
6 (c) detecting in the sample an amount of polypeptide that binds to the
7 binding agent; and

(d) comparing the amount of polypeptide to a predetermined cut-off value and therefrom determining the presence of a cancer in the patient.

1 7. A fusion protein comprising at least one polypeptide according to
2 claim 2.

1 8. An oligonucleotide that hybridizes to nucleotides 1-630 of the
2 sequence recited in SEQ ID NO:3 under moderately stringent conditions.

4 (a) polypeptides according to claim 2;
5 (b) polynucleotides according to claim 1; and
6 (c) antigen-presenting cells that express a polypeptide according to claim
7 1,

under conditions and for a time sufficient to permit the stimulation and/or expansion of T cells.

10. An isolated T cell population, comprising T cells prepared according to the method of claim 9.

11. A composition comprising a first component selected from the group consisting of physiologically acceptable carriers and immunostimulants, and a second component selected from the group consisting of:

- (a) polypeptides according to claim 2;
- (b) polynucleotides according to claim 1;
- (c) antibodies according to claim 5;
- (d) fusion proteins according to claim 7;
- (e) T cell populations according to claim 10; and

antigen presenting cells that express a polypeptide according to claim 2.

1 12. A method for stimulating an immune response in a patient, comprising
2 administering to the patient a composition of claim 11.

1 13. A method for the treatment of a cancer in a patient, comprising
2 administering to the patient a composition of claim 11.

1 14. A method for determining the presence of a cancer in a patient,
2 comprising the steps of:
3 (a) obtaining a biological sample from the patient;
4 (b) contacting the biological sample with an oligonucleotide according to
5 claim 8;
6 (c) detecting in the sample an amount of a polynucleotide that hybridizes
7 to the oligonucleotide; and
8 (d) comparing the amount of polynucleotide that hybridizes to the
9 oligonucleotide to a predetermined cut-off value, and therefrom
determining the presence of the cancer in the patient.

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12 15. A diagnostic kit comprising at least one oligonucleotide according to
claim 8.

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14 16. A diagnostic kit comprising at least one antibody according to claim 5
and a detection reagent, wherein the detection reagent comprises a reporter group.

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16 17. A method for inhibiting the development of a cancer in a patient,
comprising the steps of:
17 (a) incubating CD4+ and/or CD8+ T cells isolated from a patient with at
18 least one component selected from the group consisting of: (i)
19 polypeptides according to claim 2; (ii) polynucleotides according to
20 claim 1; and (iii) antigen presenting cells that express a polypeptide of
21 claim 2, such that T cell proliferate;
22 (b) administering to the patient an effective amount of the proliferated T
23 cells,
24 and thereby inhibiting the development of a cancer in the patient.

25
26 18. An isolated polynucleotide encoding a protein of less than 300 amino
acids comprising a sequence selected from the group consisting of:
27 (a) sequence provided in SEQ ID NO:6;
28 (b) complements of the sequences provided in SEQ ID NO:6;

5 (c) sequences having at least 90% identity to a sequence of SEQ ID NO:
6 6; and
7 (d) degenerate variants of a sequence provided in SEQ ID NO:6.

1 19. An isolated polypeptide comprising an amino acid sequence selected
2 from the group consisting of:

3 (a) sequences encoded by a polynucleotide of claim 18; and
4 (b) sequences having at least 90% identity to a sequence encoded by a
5 polynucleotide of claim 18; and
6 (c) the sequence provided in SEQ ID NO:869.

1 20. An expression vector comprising a polynucleotide of claim 18
2 operably linked to an expression control sequence.

1 21. A host cell transformed or transfected with an expression vector
2 according to claim 20.

1 22. An isolated antibody, or antigen-binding fragment thereof, that
2 specifically binds to a polypeptide of claim 19.

1 23. A method for detecting the presence of a cancer in a patient,
2 comprising the steps of:

3 (a) obtaining a biological sample from the patient;
4 (b) contacting the biological sample with a binding agent that binds to a
5 polypeptide of claim 19;
6 (c) detecting in the sample an amount of polypeptide that binds to the
7 binding agent; and
8 (d) comparing the amount of polypeptide to a predetermined cut-off value
9 and therefrom determining the presence of a cancer in the patient.

1 24. A fusion protein comprising at least one polypeptide according to
2 claim 19.

1 25. A method for stimulating and/or expanding T cells specific for a tumor
2 protein, comprising contacting T cells with at least one component selected from the group
3 consisting of:

4 (a) polypeptides according to claim 19;
5 (b) polynucleotides according to claim 18; and
6 (c) antigen-presenting cells that express a polypeptide encoded by a
7 polynucleotide according to claim 18,
8 under conditions and for a time sufficient to permit the stimulation and/or expansion of T
9 cells.

1 26. An isolated T cell population, comprising T cells prepared according to
2 the method of claim 26.

1 27. A composition comprising a first component selected from the group
2 consisting of physiologically acceptable carriers and immunostimulants, and a second
3 component selected from the group consisting of:

- (a) polypeptides according to claim 19;
- (b) polynucleotides according to claim 18;
- (c) antibodies according to claim 22;
- (d) fusion proteins according to claim 24;
- (e) T cell populations according to claim 27; and

antigen presenting cells that express a polypeptide according to claim 19.

28. A method for stimulating an immune response in a patient, comprising administering to the patient a composition of claim 28.

1 29. A method for the treatment of a cancer in a patient, comprising
2 administering to the patient a composition of claim 28.

1 30. A diagnostic kit comprising at least one oligonucleotide according to
2 claim 25.

1 31. A diagnostic kit comprising at least one antibody according to claim 22
2 and a detection reagent, wherein the detection reagent comprises a reporter group.

1 32. A method for inhibiting the development of a cancer in a patient,
2 comprising the steps of:

(a) incubating CD4+ and/or CD8+ T cells isolated from a patient with at least one component selected from the group consisting of: (i)

5 polypeptides according to claim 19; (ii) polynucleotides according to
6 claim 18; and (iii) antigen presenting cells that express a polypeptide
7 of claim 19, such that T cell proliferate;
8 (b) administering to the patient an effective amount of the proliferated T
9 cells,
10 and thereby inhibiting the development of a cancer in the patient.

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